WHAT IS CLAIMED IS:

1. A method of measuring pulse transit time of a living subject, comprising:

producing first and second pulse wave signals by sensing the pulse at first and second pulse points, respectively, said first and second pulse points being spaced from one another;

differentiating said first and second pulse wave signals;

selecting corresponding points of said first and second pulse wave signals based on results of said differentiating; and

detecting a time delay between the selected points.

2. A method according to Claim 1, wherein said selecting includes selecting a point of predetermined slope characteristic from each of said first and second pulse wave signals.

3. A method according to Claim 2, wherein said selecting includes selecting a point of maximum slope from each of said first and second pulse wave signals.

4. A method according to Claim 1, wherein said first and second pulse points are located on a first artery and a second artery, respectively.

5. A method according to Claim 4, wherein said first artery is a brachial artery and said second artery is a radial artery.

6. A method according to Claim 1, wherein the pulse at at least one of said first and second pulse points is sensed with a fiberoptic sensor having a fused-fiber coupling region.

7. A method according to Claim 6, wherein at least a portion of said fused-fiber coupling region is configured such that it can be deflected to change an output of said fiberoptic sensor without said coupling region being put under tension.

8. A method according to Claim 6, wherein said fused-fiber coupling region is substantially U-shaped.

9. An apparatus constructed to perform the method of any one of Claims 1-8.

10. An apparatus that measures pulse transit time of a living subject, comprising:

first and second pulse sensors to be placed at a first pulse point and a second pulse point, respectively, said first pulse point and said second pulse point being spaced from one another;

at least one of said first and second sensors being a fiberoptic sensor including a fused-fiber coupling region having at least a portion constructed such that it can be deflected without said coupling region being put under tension; and

a signal processing unit connected to said first and second pulse sensors and operative to determine pulse transit time based on outputs of said first and second sensors.

10 11. An apparatus according to Claim 9 10, wherein each of said first and second sensors is a fiberoptic sensor having a fused-fiber coupling region with a portion configured as aforesaid.

11 12. An apparatus according to Claim 9 10, further comprising an electro-optic circuit optically coupled to a plurality of output optical fibers of said one sensor to convert light received from said output fibers to an electrical output having a level dependent upon an amount of deflection of said portion of said coupling region.

12 13. An apparatus according to Claim 11 12, wherein said electro-optic circuit comprises a plurality of photodetectors optically coupled to said plurality of output fibers, respectively, and a differential amplifier circuit to which outputs of said photodetectors are connected.

13 14. An apparatus according to Claim 10, wherein said one sensor has a support structure configured to conform generally with a portion of a person's arm.

15. An apparatus that measures pulse transit time of a living subject, comprising:

first and second pulse sensors to be placed at a first pulse point and a second pulse point, respectively, said first pulse point and said second pulse point being spaced from one another;

at least one of said sensors being a fiberoptic sensor including a substantially U-shaped, fused-fiber coupling region; and

a signal processing unit connected to said first and second pulse sensors and operative to determine pulse transit time based on outputs of said first and second sensors.

15 16. An apparatus according to Claim 15, wherein each of said first and second sensors is a fiberoptic sensor having a substantially U-shaped, fused-fiber coupling region.

16 17. An apparatus according to Claim 15 further comprising an electro-optic circuit optically coupled to a plurality of output optical fibers of said one sensor to

21

convert light received from said output fibers to an electrical output having a level dependent upon an amount of deflection of said coupling region.

17 16

18. An apparatus according to Claim 17, wherein said electro-optic circuit comprises a plurality of photodetectors optically coupled to said plurality of output fibers, respectively, and a differential amplifier circuit to which outputs of said photodetectors are connected.

18 19

19. An apparatus according to Claim 18, wherein said one sensor has a support structure configured to conform generally with a portion of a person's arm.

add 21